CENTER FOR MINERALS TECHNOLOGY

CENTER

Established in 1995 the Center's focus is on developing new technologies for minerals processing. Specific areas of expertise include the design of high efficiency grinding mills using state of the art computer simulation software, advanced mill analysis and monitoring methods, technologies for the in-line monitoring and measurement of particle size on moving conveyor belts, and the real-time control of industrial milling processes.

TECHNOLOGY

Computer software, on-line instruments and laboratory procedures for the design, monitoring, control and analysis of industrial grinding machines and operating mineral recovery plants have been demonstrated and are now available for application in industry.

ACCOMPLISHMENTS

An instrument to measure the distribution of sizes of particles on moving conveyor belts has been developed and successfully tested at industrial sites. A key benefit is that it provides real-time process control for mining and milling operations. A laboratory on-line particle analysis system (**OPSA**) was installed at an industrial site for plant control by pellet characterization and has been licensed to several companies. **Millsoft™**, a grinding mill software, was sold to Process Engineering Resources, Inc., a Utah company. The program is made available for online access via the World Wide Web. To date, 13 licenses were sold during the fiscal year to industrial customers, who have benefitted significantly in terms of improved productivity. **MMIA** - an image analysis software for mineral liberation analysis has been developed to commercial standards. **MODSIM** is a modular simulator for ore dressing plants. Companies in Australia and Brazil have purchased licenses to use MMIA in their laboratories. A patent application for a dual drive planetary mill was filed. **Mineral Technologies Inc.** the spin-off company, continues to develop and market MODSIM and the image analysis software systems (including MMIA) for quantitative mineralogy and provides laboratory, analytical and consulting services. A new spin-off, **Milltech Engineering Co.,** was formed in Feb. 1999 (www.milltecheng.com). The company uses cutting edge modeling techniques and advanced simulation tools to devise practical solutions for problems.

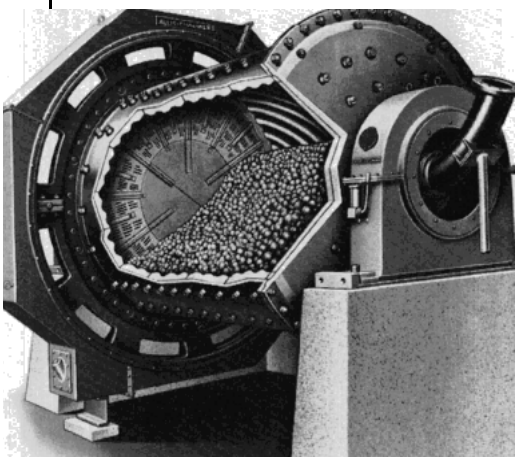
CONTACT

Director: R. Peter King, Ph.D.
University of Utah, Salt Lake City, Utah
Phone 801-585-3113, Fax 801-581-8119
rpking@mines.utah.edu

Can You Imagine...

. . . a tool which can observe milled materials traveling along a conveyor belt, calculate the average particle size and provide real time feedback to control and optimize the milling operation?

THE CENTER DEVELOPS LABORATORY AND COMPUTER SYSTEMS FOR OPTIMIZING PERFORMANCE AND MINIMIZING ENERGY CONSUMPTION IN INDUSTRIAL BALL MILLS WHICH ARE CENTRAL TO ALL MINERAL RECOVERY OPERATIONS.



- Typical ball mill grinding operation